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ABSTRACT

In today's society, young children have few experiences with aerobic activities, a pattern of exercise traditionally reserved for adults. This paper discusses how aerobic exercises can be used in a preschool environment, arguing that such activities are best presented using a thematic approach so that young children can form impressions about themselves and their surrounding milieu. After explaining the importance of movement programs for young children's health, motor development, and social learning, the paper explores pediatric exercise science and the ways in which adult standards for aerobic exercise must be adjusted for young children. Criteria for a good preschool exercise class are presented next: be non-competitive; emphasize games over repetitive calisthenics; prohibit weightlifting; never exceed each child's capability; contain frequent intervals of rest; promote positive self-image; supervise closely; use upbeat music; use size-appropriate equipment; let movement be a matter of choice; involve adults in the workout; and use special themes for each session. The paper includes a sample theme lesson organized around "space and direction" and an appendix which includes results from a 1991 Canadian survey of physical activity programs available at day care centers. Contains 11 references. (EV)

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WE HUFF AND PUFF: THE PARAMETERS AND THE PROGRAM OF AEROBICS FOR CHILDREN UNDER FIVE

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WE HUFF AND WE PUFF: THE PARAMETERS AND THE PROGRAM OF AEROBICS FOR CHILDREN UNDER FIVE

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In today's society young children have few experiences with aerobic activities. This pattern of exercise has traditionally been reserved for adults. However, aerobic exercises can be used in a preschool environment. Aerobic activities are best presented from the thematic approach so that young children can form impressions about themselves as well as their surrounding milieu.

The parameters of this presentation are outlined below. Firstly, the focus of this paper is directed towards young children, ages three to five. Secondly, the thematic concept of physical activity is premised on a selected theme which permeates throughout a movement lesson. Thirdly, aerobics can be best explained to preschoolers as follows: "They are activities that make us huff and puff or breathe hard." Fourthly, adult standards for aerobic exercising have to be adjusted when considering programs for young children.

In the context of the preceding parameters, this presentation will endeavour to put forth the criteria for developing an aerobics workout for young children, present the theme approach as a vehicle to stimulate children to partake in this form of physical activity, and finally to facilitate the 'how to' for those desiring to use this style of exercising.

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WAYNE D. EASTMAN, Ed.D.

> Activity in the infancy stage was typified by warm-up movement. These same activities (or variations of them) were continued for toddlers, with the addition of exploratory movements. The preschool stage builds on these cornerstones and adds a third dimension- vigorous activity that promotes good aerobic health (Fish, 1989).

In today's society young children have few experiences with aerobic activities. This pattern of exercise has traditionally been reserved for adults. However, aerobic exercises can be used in a preschool environment. Aerobic activities are best presented from the thematic approach so that young children can form impressions about themselves as well as their surrounding milieu. When preschoolers are exposed to aerobic experiences, educators must modify the program so that it adheres to the physiological and affective characteristics of this age group (Eastman, 1994).

The parameters of this presentation are outlined below. Firstly, the focus of this paper is directed towards young children, ages three to five. Secondly, the thematic concept of physical activity is premised on a selected theme which permeates throughout a movement lesson. Thirdly, aerobics can be best explained to preschoolers as follows: "They are activities that make us huff and puff or breathe hard" (Fish, 1989). Fourthly, adult standards for aerobic exercising have to be adjusted when considering programs for young children.

In the context of the preceding parameters, this presentation will endeavour to put forth the criteria for developing an aerobics workout for young children, present the theme approach as a vehicle to stimulate children to partake in this form of physical activity, to facilitate the 'how to' for those desiring to use this style of exercising, and finally a terse overview of pediatric exercise science as it relates to preschoolers and aerobic fitness.

WHY MOVEMENT PROGRAMS FOR YOUNG CHILDREN

Why are movement experiences worthwhile and, indeed, even necessary? Physical activity is accepted as having a positive relationship with good health, happiness, and vitality. As Canadians we have one of the highest standards of living in the world, however, studies have demonstrated that physical fitness levels in individuals begin to decrease at the age of five. Physical activity is a crucial component of an early childhood education environment. Research supports the fact that more than three-fourths of a child's basic motor movements are attained by twelve years of age. Consequently, a wide variety of carefully planned movement experiences at an early age is a necessary prerequisite for later motor development (Eastman, 1993).

A movement program also contributes to social learning. Such social skills as sharing and cooperation are promoted when young children are engaged in movement experiences. Social values of physical activities have to be viewed in the context of the age of the child. For instance, one would hot expect a two -to-three year

old to interact with other preschoolers fore any length of time. At this stage young children prefer being on their own. Consequently, as in all other areas of an early childhood program, motor expectations have to be age-appropriate as well as individual-appropriate (Eastman, 1992).

Educators have long been cognizant of the significance of movement experiences in the motor development of young children, perhaps the best summary of the meaning of movement to children appears in The Significance of The Young Child's Motor Development, 1988:

> - To the young child, movement means life. Not only does he/she experience life in his/her own movements but also he/she attributes life to all moving things
> - Movement is, for the young child, an important factor in self-discovery. The emerging concept of self is ego-enhancing as he/she calls attention to his/her stunts and tricks.
> - Movement means discovery of the environment. Movement assists the young child in achieving and maintaining his/her orientation in space. It is an important factor in his/her development of concepts of time, space and direction.
> - What does movement mean to a young child? It means-freedom from the restrictions of narrow physical confinements and freedom to expand one-self through creative body expressions.
> - Movement means safety. In a basic sense it has survival value.
> - To the young child, movement is a method of establishing contact and communication.
> - Not the least among the meanings of movement for the young child is sheer enjoyment and sensuous pleasure. He/she runs and screams with excitement as an expression of joy in just being alive (Eastman, 1993).

PEDIATRIC EXERCISE SCIENCE

Adult standards for aerobic exercising have to be adjusted when considering programs for young children. In the past there has

been a tendency to equate cardiorespiratory activities for adults with aerobic exercise for children. When preschoolers are exposed to aerobic experiences, aerobic definitions and outcomes require modification- for example, heart rate. One of the major indicators of acceptable workload when performing aerobic exercise is heart rate. The average adult's heart rate is 72 beats per minute while the 3-5 year old is 100 beats per minute. Whaley and Wong (1979) put forth the following as normal rates for young children: 1 to 11 months of age the heart rate is 120 beats per minute; for the two year old the heart rate is 110 beats per minute; and for the 4 to 6 year old the heart rate is 100 beats per minute.

The development of VO (2) is considered a primary factor in determining aerobic fitness in adults. However, children's aerobic fitness differs from their older counterparts. As Rowland (1990) articulates: "Analysis of the component of aerobic fitness in children suggests shortcomings compared with adults; inferior ventilatory efficiency, possible impaired production of cardiac output and stroke volume, and low blood-oxygen carrying capacity are all characteristics of prepubertal subjects that improve as subjects grow".

Rowland's in his well recognized book Exercise and Children's Health states, "Proponents of the view that VO (2) max does not respond to aerobic training in children have suggested that the high daily activity levels of youngsters effectively act as a

training stimuli". Furthermore, as summarized by the American Academy of Pediatrics, "The Pre-school child who characteristically uses his large muscles during many hours of the day is continuing a self-improved program of physical fitness" (Rowland, 1990). The preceding tenet is premised on a society where young children are partaking in regular vigorous activities. This assumption must be considered in the light of the reality that a fairly high percentage of children five and under are institutionalized in day care centres and many are not exposed to a daily large muscle curriculum.

If one subscribes to the former view than educators should not be concentrating on formal aerobic programs for young children but rather getting preschoolers started in habits of regular exercise so that early physical activity intervention initiatives act as a catalysis for promoting active rather than sedentary children. "Getting youngsters in habits of regular exercise can provide a lifelong means of helping prevent chronic cardiovascular disease in adulthood" (Rowland, 1990).

During exercise children require special attention to both environmental conditions and fluid replacement. When a child's surrounding temperatures approach body temperature he or she has a more difficult time than older subjects losing body heat through convention and radiation. The preceding physiological response occurs because children have a grater proportion of body surface to

mass than do adults (Rowland, 1990). Hence, those supervising children's play must be cognizant of potential heat-related difficulties and build-in frequent rest periods in an exercise program.

When discussion pediatric exercising several unique difficulties require consideration . Physiological responses to exercise can be monitored in adults through valid testing protocols. However, testing modalities are not necessarily adaptable to children. For example, little maximal data on preschoolers' aerobic capacity is available because they are unable to maintain their balance on a treadmill belt. Thus, a germane question arises, how can exercise variables in children be compared and/or monitored (Rowland, 1990)?

In adults the effects of exercise training can be readily ascertained. However, in children pediatric exercise specialist are confronted with the question of how to separate physiological effects of exercise training from those of normal biological development. The preceding concern is evident because "Changes that occur with biological maturation in children mimic many of the physiological effects observed after physical training. This biological/physiological scenario is compounded by the maturation reality that growth rates are not linear during childhood (Rowland, 1990).

CRITERIA FOR A GOOD EXERCISE CLASS

The primary goals of aerobics for young children must be founded on fun and introducing preschoolers to the habit of regular exercise. With the preceding in mind, a good exercise class for preschoolers should adhere to the following criteria (Eastman, 1994):

- Be non-competitive. Competition has no role to play in an early childhood movement program especially when one considers such preschool characteristics as self-consciousness, the need for constant encouragement, the need to progress at their own rate, and the desire to constantly explore environments.
- Emphasize games over repetitive calisthenics. Simple games, for example, the Hokey Pokey, can have the same physiological benefits as calisthenics. Also games can stimulate the high energy level needed so that preschoolers can be encouraged to continue with the movement experience.
- Prohibit weightlifting. Because of possible adverse affects of weightlifting on children, this domain is to be avoided.
- Never exceed each child's capability. It is important to know the limits of each child in the group. The concept of developmental appropriateness has two dimensions, age appropriateness and stage appropriateness. Educators need to be aware of the typical developmental patterns of children within each age span.
- Contain frequent intervals of rest. Young children tire easily, hence, rest periods must be built into the program.
- Promote positive self-image. Movement experiences must be designed so that each child can garner success, thus, the setting and the activities must be presented in an informal manner. This is one of the key differences between aerobic sessions for adults and young children.
- Be closely supervised. For safety as well as for scanning purposes the child-adult ratio must be low.
- Upbeat music is mandatory. Appropriate music is often the attention getter which invites children to participate and to continue the session. Appropriate music can range from the classical to rock and roll. For children it is the beat not the style of music which attract them.
- Use size-appropriate equipment. Young children become overwhelmed with adult-size proportions. For instance, a child who is served adult like food portions on an adult dinner plate often becomes stressed because of the

subtle request of consuming all that food. Whereas, child-size portions placed on a small plate is much more appropriate and less stressful. The preceding example of size and expectation is also germane to movement. For example, if the parachute is used in an aerobics session, the smaller, eight handled version is much less threatening than the larger model. Using balls that are soft and sized to reflect a preschoolers tracking capabilities enhance young children's anticipation to play with equipment.

- Movement should be a mater of choice for a child. Children must partake out of choice and with little emphasis placed on completing the exercise perfectly.
- Involve adults in the workout. The movement program will be more successful if children and adults participate together. Adult modelling may simulate a child's interest in physical activity.
- The theme chosen for an aerobic session can be as broad as the imagination of the educator. Such themes as special days, for example Halloween, transportation, etc. can be utilized.

A precept to the implementation of a physical activity program in an early childhood setting is an understanding of the characteristics, interests, and needs important in curriculum planning. The strongest practical implication for a wide variety of movement experiences for young children is that it is at this age basic motor skills are being established; by age five all the fundamental movement patterns have emerged. Young children need to exercise their growing muscles. Preschoolers continually try out their range of bodily actions, whether it be running, jumping or in a game. During these endeavors they learn about themselves as well as their surrounding environment. Furthermore, while physical activity affects their physiological maturation, movement experiences also teach cognitive concepts such as small, large, and around and straight ahead (Eastman, 1993).

A VIABLE AEROBICS PROGRAM

There are several directions preschool educators can take when promoting aerobic type activities. The theme approach is one readily utilized by many teachers. When using this method, educators would develop an activity planning sheet comprising the following categories: theme, skill development, equipment, lesson, and evaluation of the lesson (Curtis, 1982). Remember, the role of the educator is to facilitate children's movement experience, but not to dominate it.

The thematic approach (see sample lesson) to physical activity is not a panacea for involving all young children in aerobic type play but it tends to be a more successful teaching medium than traditional methodologies because it focuses on the reality that movement is one of the child's most utilized means of non-verbal communication and expression. If the thematic approach is to be successful, educators have to be cognizant of several factors: the activities should concentrate on large muscle pursuits, the session must be active and challenging, and explanations must be kept to a minimum (Eastman, 1992).

Aerobics can be best explained to preschoolers as follows:

> They are activities that make us huff and puff or breathe hard. When this is happening, our hearts are working extra hard to carry oxygen around to all the parts of our bodies. This is good for them because it exercises them and makes them stronger (Fish, 1989).

An half-hour exercise session, is sufficient for young children. The workout should commence with appropriate clothes and foot attire. Then have your portable stereo system with marching music, without lyrics, for the warm-up, music for the aerobics section, and relaxing music, without lyrics, for the cool-down period ready. It is suggested for continuity that three and four and five and six year old children be placed in separate groupings (Eastman, 1994).

"We believe that the naturally faster heart rates of young children as well as their limited interest in sustained activities, the best way to introduce aerobics is by encouraging interval-training-type activities" (Fish, 1989). Hence, because the thematic approach to physical activity concentrates on the spurting actions of young children, which in turn is the foundation of interval training, this approach and aerobics marry nicely.

Aerobic exercising for young children can follow the same sequence as for adults: warm-up, workout, and cool-down. The key to successfully involving preschoolers in this form of movement is that the activities have to be relatively short and vigorous in nature and with a minimum of directions (Fish, 1989).

The warm-up should include activities that involve every part of the body. Lead-up exercises for young children can be the same as for adults, however, they have to be completed faster and with terse explanations. Action songs are a further medium of warming-

SAMPLE THEME LESSON

THEME:	Space and Direction
SKILL DEVELOPMENT:	Moving through space; high and low movements; and moving body parts towards, away from, in front of, behind, around, through and between objects.
EQUIPMENT:	None
LESSON:	Always begin a lesson with an action song. Action songs are attention getters as well as a tool to lead young children into more vigorous and complicated movements.
	The second component of this lesson entails vigorous activities which reinforce the theme. The selection of the activities should be predicted on problem-solving experiences. In this sample lesson, an obstacle course composed of hula hoops, a long bench, chairs, and a target game would accentuate the theme.
	The third aspect of a movement lesson is 'The Game'. The game selected should reinforce the theme. Many teachers device their own games, hence, developing a movement experience which is germane to their specific setting.
	The final stage of the lesson is what can be best called the cooling down. Children play hard, therefore, a cooling down period is necessary. The activity or activities should be tranquil in nature and designed to calm the child. Animal imitation where children mimic slow moving animals is appropriate (Eastman, 1992).

up young children. Preschoolers enjoy this pattern of movement because of its rhythmic and repetitious nature. Such action songs as the Hokey Pokey, Head, Shoulders, Knees and Toes, and I am a Little Tea Pot will satisfy the lead-up criteria of an aerobic session. Traditional stretching exercises such as windmills, stretch and reach, marching, balancing, elephant walk, and Row, Row Your Boat are adaptable to a workout routine for young children (Eastman, 1994).

Unlike an adult exercise session, the physical aspect of a workout must be supplemented with emotional support. Hence, when sharing movement experiences with young children, adults have to display love and support through verbal and facial expressions. Consequently, movement activities must be personal and individually directed. For instance, when stretching the adult could have the child imitate an animal. To further the preceding thought, a picture of the animal could be placed on the wall facing the children (Eastman, 1994).

The workout segment should be premised on exploratory movements whereby the heart rate is elevated. Such activities as vigourous rhythmic parachute play will satisfy the foregoing criteria. For a change the more 'formal' workout could be supplemented with 'informal' exercise such as a walk around the neighbourhood (Eastman, 1994).

Fish (189) states: "The preschoolers period of vigourous activity should include some type of interval or sustained aerobic activity, such as running, swimming or bicycling". The preceding mode of exercising could be supplemented and/or alternated with a more developmentally appropriate workout; for example, giving a young child a hula hoop and asking him/her to do as many thing as possible with it. The former as well as the later suggestion both accomplish the goal of enabling the preschooler to exercise his/her heart so that it becomes more efficient.

The tempo of the music is an important factor for involving children in the workout segment. The selected music should be the rapid tempo variety and instrumental if possible. Furthermore, unlike the workout segment of an adult class, games are an essential aspect of movement experiences for young chidden. Games should be simple in nature and scope, emphasizing a large muscle curriculum, and never competitive with the focus on personal challenge. A large muscle curriculum stimulates young children through activities such as climbing, jumping, running, and rolling. The game(s) selected to augment the workout should reinforce the theme of the aerobic lesson. For preschoolers games should adhere to the following criteria: use basic patterns, not have more than three steps in sequence, have a minimum of verbal instruction, have continuous participation, and allow the children some choices of actions. Games such as Squirrel in the Trees, modified version Duck, Duck, Goose, and Punchinello can be incorporated into a

workout session (Eastman, 1994).

Cool down activities are necessary following the vigorous aerobic segment so that children can calm down emotionally as well as physiologically. The activities selected for the cooling down process can be the same as those used for the warm-up except the tempo has to slow down considerably. Suggested closure and relaxation exercises could include: stretch and reach, bent leg stretch, lazy lion (Fish, 1989), and imagination- have the children imagine his/her favourite place and what he/she does at this favourite spot (Eastman, 1994).

The themes selected for the aerobic activity plan can be general, for example space and direction, or occasion -specific, for example a focus on a special event such as Halloween, or skill theme travel maps can also be utilized. Sanders (1992) describes skill themes as the physical movement or skills that adults wish children to learn and perform. Furthermore, he divides skill themes into three categories: locomotor skills (walking, running, skipping, etc.), nonmanipulative skills (turning, balancing, etc.), and manipulative skills (throwing, kicking, etc.). Movement concepts augment skill themes in that they describe how skills are performed. For example, skating is the skill. Forward, backward, and fast are concepts that describe skating. Consequently, to understand and plan movement programs for young children one needs a knowledge of both skill themes and movement concepts (Sanders, 1992).

Theme Travel Maps should be viewed as guides to presenting skill-development to young children. Sanders (1992) describes Travel Maps as follows: "Just as road maps help drivers plan appropriate routes to get to their destinations, the skill theme travel map arranges skill development activities in a logical progression for children to develop physical skills". The theme travel map progresses from the simple, easy to learn to the more advanced. Furthermore, the maps include developmentally appropriate activities for preschoolers premised on the truism that children do not learn skills at the same rate.

The theme map concept can be utilized as one tool in promoting aerobic type activities to young children. Its success is predicated on a marriage of aerobic fun and the development of specific skills. An example of how a map can be used in an aerobic session is the Locomotor Skill Travel Map. In this particular example, the map progresses from walking to marching, to galloping, to hopping, to running, to travelling around obstacles, and finally to skipping (Sanders, 1992).

SUMMARY

> Insofar as children and youth are concerned, there is a sense of urgency, surrounding the promotion of active, healthy lifestyles. The need is great. Increasing numbers of children and youth are exposed to a wide variety of social ills and behaviours which put their health and lifestyles at risk (CAHPER, 1992).

The preceding statements extracted from Physical Education 2000: Foundations for Achieving Balancing in Education enunciates the need for children, including preschoolers, to engage in regular physical activity as one of the prerequisites to achieving health.

Exercise attitudes need to be developed early because "Levels of habitual energy expenditure decline during childhood (Rowland, 1990). Although this decline is associated with a normal maturational change, Rowland (1990) implies that this rate of activity decline is influenced by modifiable environmental factors, for instance, programs that encourage habits of participation in regular physical activity.

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APPENDICES

THE 1991 CANADIAN INSTITUTE OF CHILD HEALTH NATIONAL SURVEY OF DAY CARE CENTRES RE THE TYPES OF PHYSICAL ACTIVITY PROGRAMS AVAILABLE

1. THE VAST MAJORITY OF RESPONDENTS (85%) RATED PHYSICAL ACTIVITY AT LEAST AS HIGH IN IMPORTANCE AS OTHER PROGRAM ACTIVITIES; 13% RATED IT AS MORE IMPORTANT.

2. HOWEVER, ACCORDING TO THE RESPONSES, CHILDREN IN CHILD CARE CENTRES DO NOT SPEND A LARGE PERCENTAGE OF THEIR DAY ENGAGED IN PHYSICAL ACTIVITY. IN 45% OF CENTRES, PRESCHOOLERS SPEND LESS THAN 10% OF THEIR TIME IN STRUCTURED INDOOR GROSS MOTOR ACTIVITIES AND LESS THAN 25% OF THEIR TIME IN FREE INDOOR GROSS MOTOR ACTIVITIES.

3. THE MOST COMMON STRUCTURED INDOOR ACTIVITIES WERE DANCE/MUSIC (93%); GAMES (61%); AND CIRCLE (52%)

4. THE MOST COMMON FREE INDOOR ACTIVITIES WERE PLAY WITH BLOCKS, (82%); CLIMBING (45%) AND BALLS/BEAN BAGS (27%).

5. PRESCHOOLERS DO NOT FARE ANY BETTER WHEN THEY PLAY OUTDOORS. APPROXIMATELY 60% OF CENTRES REPORTED THAT PRESCHOOLERS SPEND LESS THAN 10% OF THEIR TIME IN STRUCTURED OUTDOOR GROSS MOTOR PLAY. THIRTY-SIX (36%) OF CENTRES ALSO REPORTED THAT PRESCHOOLERS SPEND LESS THAN 10% OF THEIR TIME IN FREE OUTDOOR GROSS MOTOR PLAY.

6. THE MOST COMMON STRUCTURED OUTDOOR ACTIVITIES WERE WALKS (81%) AND GAMES (46%).

7. THE MOST COMMON FREE OUTDOOR ACTIVITIES WERE CLIMBING (66%) RUNNING RACES (65%).

8. ONLY 20% OF RESPONDENTS HAD A SPACE USED EXCLUSIVELY FOR INDOOR GROSS MOTOR ACTIVITY.

9. FIFTY-SEVEN PERCENT (57%) OF CENTRES REPORTED THAT THEY HAVE OUTDOOR SPACE EXCLUSIVELY USED FOR GROSS MOTOR PLAY ACTIVITY.

10. APPROXIMATELY 23% OF CENTRES RESPONDING TO THE SURVEY STATED THAT THEIR STAFF MEMBERS DID NOT TAKE ANY COURSES IN PHYSICAL ACTIVITY IN ORDER TO OBTAIN THEIR EARLY CHILDHOOD EDUCATION CERTIFICATE/DIPLOMA/DEGREE; 28% REPORTED THAT THEIR STAFF MEMBERS TOOK ONE COURSE.

11. THE MAJORITY OF CENTRES REPORTED THAT THEIR FULL-TIME EMPLOYEES HAVE NOT TAKEN ANY PHYSICAL ACTIVITY TRAINING IN ADDITION TO THEIR EARLY CHILDHOOD EDUCATION TRAINING.

12. THE MAJORITY OF TRAINING IN EARLY CHILDHOOD EDUCATION TAKES PLACE IN COMMUNITY COLLEGES. THE LENGTH OF COURSES RANGED FROM 18 TO 68 HOURS.

13. IN GENERAL, EVEN THE COURSES WHICH WERE DEVOTED EXCLUSIVELY TO PHYSICAL ACTIVITY PROGRAMMING SEEMED TO BE MOSTLY THEORETICAL IN NATURE AND PROVIDED FEW PRACTICAL PHYSICAL ACTIVITY EXPERIENCES FOR EARLY CHILDHOOD EDUCATORS.

PRESCHOOLERS AND PEDIATRIC EXERCISE

1. IN THE PAST, THERE HAS BEEN A TENDENCY TO EQUATE CARDIORESPITORY ACTIVITIES FOR ADULTS WITH AEROBIC EXERCISE FOR CHILDREN-SEE FOR EXAMPLE HEART RATE.

2. CHILDREN'S AEROBIC FITNESS DIFFERS FROM THEIR OLDER COUNTERPARTS.

3. PROPONENTS OF THE VIEW THAT VO2 MAX DOES NOT RESPOND TO AEROBIC TRAINING IN YOUNG CHILDREN.

4. THE PRESCHOOLER WHO CHARACTERISTICALLY USES HI/HER LARGE MUSCLES DURING MANY HOURS OF THE DAY IS CONTINUING A SELF-IMPROVED PROGRAM OF PHYSICAL FITNESS???????

5. ATTENTION MUST BE PAID TO BOTH ENVIRONMENTAL CONDITIONS AND FLUID REPLACEMENTS.

6. TESTING MODALITIES ARE NOT NECESSARILY ADAPTABLE TO YOUNG CHILDREN.

7. IN YOUNG CHILDREN, HOW DO WE SEPARATE PHYSIOLOGICAL EFFECTS OF EXERCISE TRAINING FROM THOSE OF NORMAL BIOLOGICAL DEVELOPMENT.

8. THEIR COMPULSION TO MOVE AND BE ACTIVE.

9. THEIR MOVEMENTS ARE SLOW AND INELASTIC.

10. THEIR INABILITY TO COORDINATE TO MANY PART MOVEMENTS RESULTS IN SUPERFLUOUS MOVEMENTS.

11. THEIR ENDURANCE IS POORLY DEVELOPED.

12. THEIR BLOOD CIRCULATION WILL QUICKLY ADJUST TO THE CHANGING DEMANDS OF EXERCISING, BUT CANNOT TOLERATE EXCESS.

13. BONES, STILL NOT STRONG, ARE EASILY DAMAGED BY INAPPROPRIATE OR IMPROPERLY PERFORMED EXERCISES.

14. THEIR POWERS OF CONCENTRATION ARE WEAK.

15. CHILDREN TIRE RAPIDLY, BOTH MENTALLY AND PHYSICALLY.

THE AEROBIC WORKOUT

1. WARM-UP:

   - ACTIVITIES THAT INVOLVE EVERY PART OF THE BODY.
   - CAN BE THE SAME AS FOR ADULTS- FASTER AND LESS EXPLANATIONS
   - ACTION SONGS ONE MEDIUM OF WARMING-UP YOUNG CHILDREN
   - TRADITIONAL STRETCHING EXERCISES ARE ADAPTABLE

2. THE WORKOUT SEGMENT:

   - PREMISED ON EXPLORATORY MOVEMENTS WHEREBY THE HEART RATE IS ELEVATED.
   - THE VIGOROUS ACTIVITY SHOULD INCLUDE SOME TYPE OF INTERVAL OR SUSTAINED AEROBIC ACTIVITY.

- THE PRECEDING COULD BE SUPPLEMENTED AND/OR ALTERNATED WITH A MORE DEVELOPMENTALLY APPROPRIATE WORKOUT.

- GAMES ARE AN ESSENTIAL ASPECT OF MOVEMENT EXPERIENCES FOR YOUNG CHILDREN.

- GAMES SHOULD BE SIMPLE, EMPHASIZING A LARGE MUSCLE CURRICULUM, AND FOCUSING ON PERSONAL CHALLENGE.

- GAMES' CRITERIA: USE BASIC PATTERNS, NOT MORE THAN THREE STEPS IN SEQUENCE, LITTLE VERBAL INSTRUCTION, CONTINUOUS PARTICIPATION AND ALLOW CHOICES.

3. CLOSURE/COOL-DOWN

- COOL-DOWN SEGMENT NECESSARY SO THAT CHILDREN CAN CALM DOWN EMOTIONALLY AS WELL AS

PHYSIOLOGICALLY.

- CAN BE SAME AS WARM-UP, ONLY TEMPO SLOWER.

THE THEMATIC APPROACH

1. CATEGORIES OF LESSON PLAN:
   - THEME
     - SKILL DEVELOPMENT
     - EQUIPMENT
     - LESSON

2. ACTIVITIES SHOULD FOCUS:
   - LARGE MUSCLE PURSUITS
   - ACTIVE/CHALLENGING
   - EXPLANATIONS TO A MINIMUM

3. THE LESSON:
   - ACTION SONGS
   - VIGOROUS ACTIVITIES
   - THE GAME
   - CLOSURE/COOLDOWN

4. THE THEME:
   BROAD- EX. SPECIAL DAYS

ACTIVITIES FOR ECE MOVEMENT PROGRAM

1. FUNDAMENTAL MOTOR PATTERNS

2. ACTIVITIES USING EQUIPMENT

3. ACTIVITIES WITHOUT EQUIPMENT

4. RHYTHMIC PARACHUTE PLAY

5. GYMNASTIC TYPE ACTIVITIES

6. OUTDOOR PLAY